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ABSTRACT

This field-tested manual is an extension of an earlier work titled "Data-Based Program Modification: A Manual," and is designed for special education resource teachers to implement with children whose mild and moderate learning handicaps have resulted in discrepancies between actual and expected reading skills. The manual's philosophy is that teachers can improve special education services by systematically measuring student progress toward individualized education program (IEP) goals and then making adjustments to increase program effectiveness. It serves as a prescription for what to measure, how to measure, and how to use measurement data in program evaluation. A discussion of the development of measurement procedures and of such technical considerations as validity and reliability begins the manual. Procedures are provided for frequent measurement of reading from the level representing the student's long-range goals in the curriculum. Units on charting student scores and writing data-based long-range IEP goals are included, along with information on graphing the long-range goal and collecting on-going data. The final unit on data utilization provides guidance in deciding when to change the program, based on graphs of student scores. (JDD)

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PROCEDURES TO DEVELOP AND MONITOR
PROGRESS ON IEP GOALS

(Revised October 1986)

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TO THE EDUCATIONAL RESOURCES
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The materials presented in this procedural manual were derived or taken directly from S. Deno and P. Mirkin, Data-Based Program Modification: A Manual (Reston, VA: The Council for Exceptional Children, 1977) and from materials developed at the Institute for Research on Learning Disabilities, University of Minnesota under contracts (300-77-0491 and 300-80-0622) with the Office of Special Education, Department of Education (Formerly the Bureau of Education for the Handicapped) through Title VI-G of Public Law 91-230.

PREFACE

When we attempt to modify the educational program for a student who, for whatever reason, is not succeeding, we are faced with a seemingly insurmountable problem - that is, it is impossible to predict what kind of a modification in a student's environment will actually increase that student's success in school. We cannot say with any certainty that either a different teacher, curriculum, method, or combination of the three will positively influence the student. In fact, efforts to improve educational programs through providing special education services are sometimes thought to place the student "at risk," since some evidence exists that students do less well in special education programs than those remaining in the regular classroom.

A second problem with which we are faced when attempting to decide what kind of program alternative might be helpful for an unsuccessful student is how to resolve the inevitable differences in personal point of view regarding what is the best way to teach academic and social skills. The training and experience of teachers, principal, social worker, school psychologist, speech therapist, occupational therapist, physical therapist, and parents are typically quite dissimilar. Theoretical and territorial disputes in planning program alternatives are common and unavoidable.

As teacher educators and researchers we have endeavored for over a decade to develop a useful approach to dealing with these two problems. Our solution has been to develop systematic and practical procedures for teachers to use in evaluating the changes made in programs for individual students. We have selected individual program evaluation as the approach to solving these

problems because a technically adequate evaluation system can quickly detect whether a prediction about how to improve a student's program was correct and permits empirical testing of alternatives in dispute. Thus program planners are free to develop their hunches about what might be helpful to a student and then use their evaluation system to discover whether they are correct.

Our initial effort to provide teachers with data-based procedures for evaluating program changes was presented in Data-Based Program Modification: A Manual, distributed by the Council for Exceptional Children. Procedures to Develop and Monitor Progress on IEP Goals is an extension of that work made possible through the Institute for Research on Learning Disabilities (IRLD) at the University of Minnesota.

This manual differs from our original manual in several important ways. First, it is more prescriptive regarding what to measure, how to measure, and how to use the measurement data in program evaluation than was the earlier manual. We feel we can be more prescriptive because our research through the IRLD has provided us with a data base for our prescriptions. A second difference in this manual is that the focus is limited to evaluating progress in reading, spelling, written expression, and social behavior. Our research in the IRLD has been limited to these four areas and we feel comfortable with prescriptions regarding what and how to measure in only these areas. A third difference is that this manual is tailored to writing IEPs. Our 1977 manual was written prior to the passage of PL 94-142, and while its general form was consistent with the requirements of that law and subsequent regulations, the match is made more completely in the present manual of procedures. A fourth, and most important, difference between this manual and our previous effort is

in its clarity and simplicity. We have designed and field-tested the manual to ensure that the typical special education teacher can learn to use the evaluation procedures correctly by using and following the manual.

A major goal of our research in the IRLD was to produce this manual by our fourth year so that we could test the efficacy of the continuous evaluation procedures during year five of the IRLD. As system developers, we are confident that what we recommend here is a technically adequate evaluation system. As researchers, we then sought to determine whether using such evaluation procedures actually helps teachers to build more successful programs for students, since that was our primary goal. The research on the efficacy of the model is promising. Students of teachers who use data do make greater academic achievement than other students.

Many people have contributed to the development of this manual, and some whose names do not appear on the title page have contributed as much as those listed as authors. Among those who deserve acknowledgment, special mention should be made of Martha Thurlow whose work at editing and production at a critical time actually made completion during the summer of 1981 possible. Also, the efficient, always accurate and cheerful efforts of Marilyn Hyatt and Audrey Thurlow in typing endless draft and final copies are something those of us who work at the IRLD have enormously appreciated but too seldom reinforce. Jim Ysseldyke, as the IRLD Director, has provided us with administrative and budgetary support, and through his own research has provided ample evidence of reasons why continuous individual program evaluation might be a necessary alternative to current practices in assessment and decision making for children with learning problems. Bert Chiang, Sandy Christenson, Patricia

Evans, Lisa Lowry, and Steve Robinson all made scholarly contributions to the research base for the procedures described here and moved on to other things before the manual was actually written. Many others whose names are not included have contributed in one way or another, and for their help we also express appreciation.

Finally, we should say that the view of this manual is that successful programs for students with learning and adjustment problems are created by continually revising those programs and testing those revisions until the data tell us the program is successful. In that spirit we present this current revision of our approach to data-based program modification and promise you that, to the extent possible, we will test, revise, and test again until we develop a system that works for you and the students you seek to serve.

S.L. Deno

P.K. Mirkin

INTRODUCTION

This manual contains materials that will help you develop procedures for monitoring children's progress in reading. The manual is designed for special education resource teachers to implement with children whose mild and moderate learning handicaps have resulted in discrepancies between actual and expected academic and/or social behaviors.

RATIONALE

Our development of a manual of materials and procedures for use in monitoring student progress rested upon two primary assumptions:

- (1) The success of special education services is defined primarily by the extent to which those services improve the success of the individual students served.
- (2) Teachers can improve services by systematically measuring student progress toward program goals, and then making adjustments in an effort to increase program effectiveness.

Given these basic assumptions and the requirement of Public Law 94-142 to provide each handicapped student with an "appropriate educational program," we set out to create a set of procedures that would have practical usefulness while at the same time retaining technical characteristics that were reliable and valid.

DEVELOPMENT

Several criteria were used to develop the measurement procedures described in this manual:

- (1) They must be valid with respect to widely used tests of academic and social behavior.
- (2) They must be immediately sensitive to the effects of relatively small adjustments made in (a) instructional methods and materials, (b) motivational techniques, and (c) administrative arrangements (e.g., adjustments in grouping, setting for instruction, teacher/tutor, time of instruction, etc.)
- (3) They must be easy to administer by teachers, parents, and students.
- (4) They must include many parallel forms that are frequently administrable (daily, if necessary) to the same student.
- (5) They must be time efficient.
- (6) They must be inexpensive to produce.
- (7) They must be unobtrusive with respect to routine instruction.
- (8) They must be simple to teach.

Based on six years of research, we created a package that can be used routinely to reliably and validly monitor student progress toward IEP goals.

TECHNICAL CONSIDERATIONS

While it is possible to use the manual without reflecting on its technical characteristics, we believe successful use and eventual adaptation require an understanding of certain critical principles.

TESTING VS. TEACHING

The measurement techniques and materials included in this manual should be used as an aid to evaluate your teaching techniques. They do not constitute a teaching technique; alone, they are not a sufficient remedial program. Teaching is separate from testing but testing should help to improve teaching.

VITAL SIGNS

The graph of student performance created by using the manual should be used to assess a student's educational health just as physicians use graphs of vital signs to assess a patient's physical health. Generally, increases on the graph indicate increased student success. To be useful as vital signs, however, you must keep your testing procedures constant. The value of vital sign information in identifying effective educational or medical treatments is diminished when the information is unreliable because of inconsistent testing procedures. For example, on occasion we have found that teachers have tried to help students do better by coaching them during the test, or rewarding them for improved test performance. Such "helps" are analogous to a physician trying to change your temperature by encouraging you to hold the thermometer between your teeth rather than under your tongue. The temperature reading may

go down, but would not represent a health improvement. It would only indicate that the measurement procedure has changed. Similarly, in measuring student performance, the measurement procedure must be constant so that the teacher can assume that an improvement in performance on the measurement task indicates true student growth.

RELIABILITY AND VALIDITY

The measurement procedures contained in this manual were identified over a three-year period at the Institute for Research on Learning Disabilities (IRLD) at the University of Minnesota. As a part of this development the reliability and validity of the measurement procedures were systematically studied. Complete reports of those studies can be obtained by writing to the IRLD. We will summarize those results briefly here.

Both test-retest reliability and interrater reliability were examined. Test-retest reliability revealed the reliabilities for all measurement procedures to be high. The correlation coefficient for equivalent forms, generally, is .90 or greater. This means that if students are administered different test forms on different days, their scores are likely to remain about the same, all other things being equal. Further, interrater reliability in scoring student responses always exceeded .95. Finally, if used repeatedly to measure a student's performance, a highly reliable estimate of individual achievement is possible.

Validity studies were directed toward determining criterion validity. Criterion validity is a measure of how well a student's performance on a test predicts that same students' status on a criterion measure. Three types of

criteria were used to establish the validity of the measures: student performance on standardized tests, age/grade placement, and placement in regular class or LD programs. Performance on the measures provided in the manual correlated adequately with performance on the standardized tests (coefficients ranged from .78-.95 in reading) and consistently increased as grade level increased. Further, performance on the measures clearly discriminated regular class students from Chapter 1 students from students in LD programs at the same grade level.

A NOTE OF CAUTION

While criterion validity is a sufficient basis for using a test to measure achievement, it is not a sufficient basis for using a test to identify what to teach. For example, we know that measuring student performance on reading aloud from a basal reader is closely related to performance on standardized reading achievement tests. Therefore, we can measure reading achievement by having a student read aloud from a basal reader. At the same time, we cannot assume that a student who reads poorly from a basal reader should necessarily be taught reading by having that student practice at reading aloud from a basal reader. The common expression for this distinction is, "Correlation is not causation." Simply because two things are closely related does not mean one causes the other. Brothers are closely related, but certainly neither caused the other! While it would be bad teaching practice to assume that how and what to teach can be completely determined by deciding what and how to measure, in Unit VI (Deciding What to Change) we do suggest ways to analyze the data you have collected so that you can decide when to

change instruction in response to student performance. However, the revisions you choose are hypotheses that need to be tested. It is our hope that as you become more skilled in data analysis, knowing what and how to measure will be increasingly useful in helping you decide how and what to teach.

UNIT I

READINGSECTION 1: Purpose and Rationale

Typically, reading is an area for which a goal on an Individual Educational Program (IEP) is written. For those students who manifest a significant discrepancy between expected and actual reading behavior, direct and frequent measurement of reading performance is desirable for two reasons. First, to ensure program success by monitoring progress towards goals, and second, to evaluate the effectiveness of changes in the instructional program procedures.

In an attempt to satisfy both of these purposes, the reading unit provides materials and procedures for frequent measurement of reading from the level representing the student's long-range goal in the curriculum - the material in which you would like to see the student reading proficiently by the end of the year.

Materials

The materials provided in the unit on reading should allow you to test the student's reading skills on works from his/her long-range goal level. These measures should serve as an accurate and sensitive measure of general reading improvement, not being limited to only those stories that are being taught. This reading section includes directions for administering and scoring reading aloud from text passages. A stopwatch is necessary and will have to be provided by you.

SECTION 2: How to Implement Measurement and Scoring Procedure for Reading Aloud from Text Passages

- (1) Select a reading text in which you guess the student will read aloud at a rate of 55-75 words correct per minute.¹
- (2) For each passage, there will be two forms. The student text is the teacher's manual copy. Put the student copy in front of and facing the student.
- (3) Take the teacher copy, and put it in front of and facing yourself.
- (4) Say to the student: "When I say 'start,' begin reading aloud at the top of this page. Try to read each word. If you wait for a word too long, I'll tell you the word. At the end of one minute, I'll say 'stop.'" (Give student 3 secs. before supplying word.)
- (5) Turn on the stopwatch as you say "start."
- (6) Follow along on your copy circling with a pencil incorrectly read words or words that were omitted.
- (7) At one minute, say "stop" and turn off the stopwatch.
- (8) Place a slash after the last word read.
- (9) Count the number of words correct and the number of errors. If the target student meets a criterion of 55-75 words per minute (wpm) correct with no more than 7 errors, use this as the level at which to measure student progress.

¹Ask regular classroom teachers what the expected reading level of average students of the same age and grade as the target student will be at the time of the next annual review.

- (10) After identifying the measurement level, randomly select 20 passages from the same book. Select about 1/3 from each of the beginning, middle, and end sections. Pick the pages that do not have many unusual proper nouns, word lists, poetry, or extensive dialogue. After selecting the 20 pages write each page number on a notecard and put all the cards in an envelope kept in your measurement station.¹ The student can then pick page numbers for measurement. Count the words per line for the 20 pages.

¹While having a measurement station is not required, it may be helpful to have a spot where you keep all the materials needed for measurement. This kind of organization will help make the measurement process more efficient.

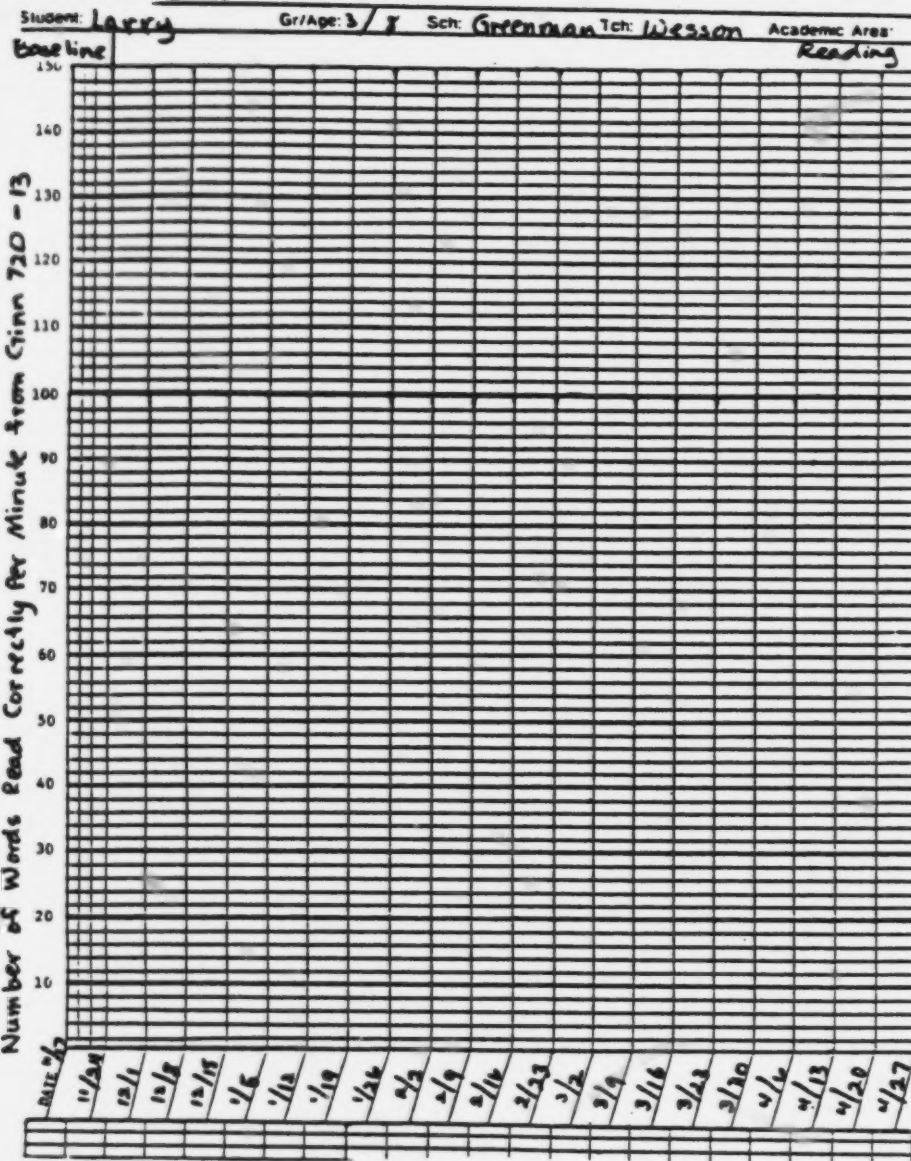
UNIT II
CHARTING STUDENT SCORES

The first step in charting student performance is setting up and labeling a graph for each student. The bottom, or horizontal axis of the graph, is labeled "school days." The graph paper is divided into school weeks, with each heavy line representing a week. In the space provided below the horizontal axis there is a place to fill in the month (m) and date (d) that corresponds to each Monday of each week (see Figure 2-1).

The left side, or vertical axis of the graph should be labeled "Number of Correct Words Read Aloud from Text Passages per Minute." . The vertical axis is divided into 75 equal lines. Each line may represent a unit of two; therefore, the graph should be labeled from 0 to 150, with each dark line representing a multiple of ten.

The above information is recorded on the graph before charting begins; also write the student's name and the subject area in the spaces provided. An example of a graph that is completely labeled is shown in Figure 2-1. In this instance, the student will be measured in reading, with "Number of Correct Words Read Aloud from Text Passages" as the index.

When both axes of the graph are scaled and labeled, and the student's name and subject area are displayed, the process of charting involves simply taking the count from the student's work and placing a dot at the intersection of the level represented along the vertical axis and the appropriate day represented along the horizontal axis.



17

Figure 2-1. Example of labeled graph.

In the area of reading, the student's performance on a one-minute reading task for five weeks was:

56 words read aloud on week 1
63 words read aloud on week 2
49 words read aloud on week 3

52 words read aloud on week 4
71 words read aloud on week 5

A dot is placed at 56 above the week 1 mark, at 63 above the week 2 mark, and so on. To complete the graph, the data points are connected by straight lines (see Figure 2-2).

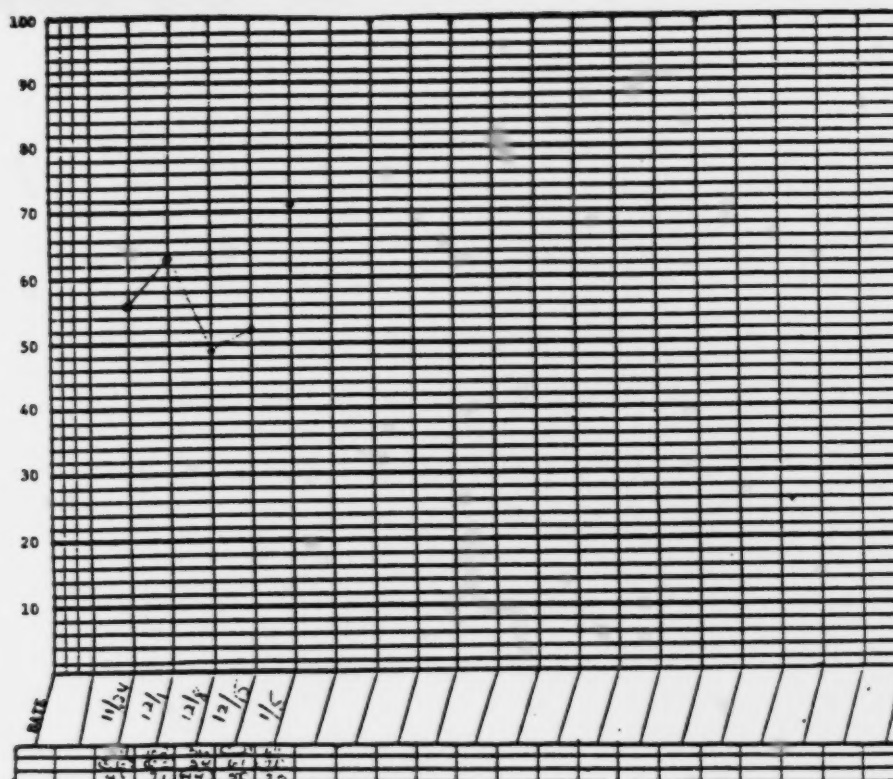


Figure 2-2. Example of charted data using words read correctly.

When both correct and incorrect are being counted, each day will have both scores represented, using a dot for correct and X for incorrect. This is noted along the vertical axis. The index for measuring a student's performance is still the number of words read aloud per minute, but we now count both words read aloud correctly from the text passage and those that are not read aloud correctly. For example, the following scores represent 5 weeks of measurement in this area:

Number of Words Read Aloud from Text Passage

<u>Day</u>	<u>Correct</u>	<u>Incorrect</u>
Week 1	56	7
Week 2	72	3
Week 3	59	8
Week 4	64	1
Week 5	86	2

The graph for these data would appear as in Figure 2-3.

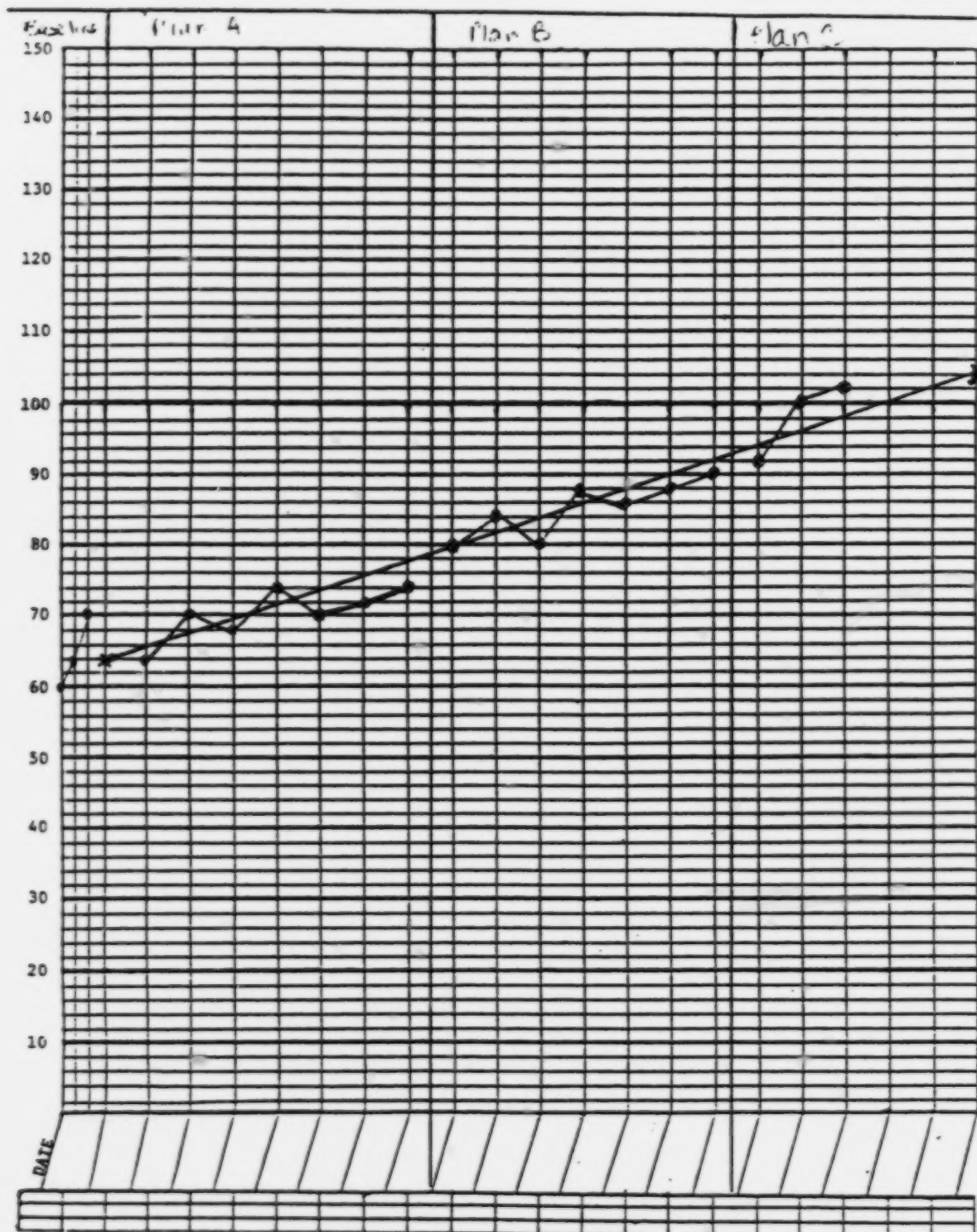


Figure 2-4. Example of charted data with interventions shown.

UNIT III

WRITING DATA-BASED LONG-RANGE IEP GOALSSECTION 1: Rationale for Long-Range Goals

PL 94-142 mandates that a handicapped student's Individual Educational Plan (IEP) state a concrete 12-month goal for each deficit area. As difficult as it may be to project specific statements of how a child will perform a year hence, setting goals and measuring progress towards those goals is important. It provides valuable program planning data for the teacher and offers an effective format for communicating pupil progress information to parents and administrators.

To illustrate the importance of setting long-range goals (LRGs), consider the following analogy:¹

Suppose you are taking a trip. Contrast the difference between taking that trip having specified your destination and taking the trip with no special endpoint in mind. For example, you leave Seattle this morning with a goal to reach Mexico City by nightfall three days hence, as opposed to merely leaving Seattle. Without a specified destination and projected arrival time, you know neither in which direction to go nor how fast to travel; having established a goal, you know both these facts (head south and really hustle). With this information you can judge whether the direction and the rate at which you are travelling will get you to your final destination on time.

¹Adapted from V. Lynch, C. McGuigan, and S. Shoemaker, "An Introduction to Systematic Instruction" (Unpublished Manuscript, SCAT Child Service Demonstration Center, Boise, Idaho, 1979).

The success of your plan always depends on where are you, where you want to go, and when you want to get there. In teaching, initial assessment information tells you where you are, while long-range goals (LRGs) identify where you are going and when you plan to arrive. These pieces of data tell you how fast to travel.

SECTION 2: Identifying the Parts of a Long-Range Goal (LRG)

The LRG is a behavioral statement of what a teacher expects a student to do at the end of a specified time period. It should include three components: (1) a specific behavior, (2) the condition under which the behavior will occur, and (3) the criteria for mastery.

SECTION 3: Practice

Q1. LRGs provide important information concerning

- (a) _____
- (b) _____
- (c) _____

Q2. Given the following goals, underline the behavior, circle the condition, and cross out the criteria for mastery. Then indicate whether the goal is complete or incomplete.

Goals	Check One	
	Complete	Incomplete
(a) Given a fourth grade reading passage, J. will read 90 wpm with less than 9 errors.		
(b) Given single digit addition problems, J. will be able to write answers at 30 problems per minute.		
(c) M. will spell words.		
(d) F. will say letters, 50 per minute.		

Answers

1. (a) What a student must accomplish,
(b) by when,
(c) how quickly he/she must progress to meet the goal.

2.

Goals	Check One	
	Complete	Incomplete
(a) Given a fourth grade reading passage, J. will read 90 wpm with less than 9 errors.	x	
(b) Given single digit addition problems, J. will be able to write answers at 30 problems per minute.	x	
(c) M. will spell words.		x
(d) F. will say letters, 50 per minute.		x

SECTION 4: Determining the Long-Range Goal

In order to write a long-range goal (LRG), you will need to know:

- (1) The date of, and the number of school weeks or months until, the next annual review. For the purposes of the study this year we will say that there are 20 weeks until the annual goal as May 1, 1987 is the end of the study. (Two weeks were left out for Christmas and Spring Break.) The beginning date is November 17 for baseline and November 24 for data collection.
- (2) The level of basal text you will use to measure the student's academic performance. The procedures for determining this were found in Unit I. The measurement level is the level in which the student reads 55-75 words correct per minute.
- (3) The student's current rate of words correct per minute in that level. For this you need 3 data points, 1 per day for 3 days using 3 different passages. The first data point can be the one you obtained when testing to find the measurement level.
- (4) The criterion of mastery. This will be set by multiplying 20×2 (40) and adding that product to the median score found in (3).

The form of a data-based long-range goal is always the same; only the behavior and the criteria differ for each area. The criteria that are specified in the sample long-range goals throughout this manual represent what we believe is an ambitious level of improvement that should be expected for any student receiving Special Education service. If you wish, you may set the criteria higher, but we caution you against setting the criteria any lower since the result is likely to be a rate of progress that is not adequate for continued achievement and growth.

CONDITION	BEHAVIOR	CRITERIA
In _____ (total # weeks until next annual review) when presented with stories from Level _____ (Level in which student currently reads aloud 55-75 wpm) in _____ (name of reading series)	student will read aloud	at the rate of: _____ (20 x 2) + median of 4 weeks baseline words correct with less than 10% error.

Some students who are instructed in 3rd grade materials, for example, may be measured in primer materials. That is fine. The instructional level and measurement levels do not have to be the same. Some students may read fewer than 55 words per minute at even the preprimer level. As long as the student reads more than 20 words per minute in that material, you can use it for measurement. If your student cannot read 20 words per minute in preprimer material, then we need to select a different student.

PROBLEMS

- Q1. Jeff is a sixth grader reading at 35 words per minute in Level 13, Ginn 720, 58 words per minute in Level 12, Ginn 720 and 92 words per minute in Level 11, Ginn 720. Write the LRG for Jeff.

- Q2. Jennifer is a second grader reading at 60 wpm in Level 6, Ginn 720, 49 wpm in Level 7, and 34 wpm in Level 8. Write the LRG in reading for Jennifer.

Answers

1. By the time of the next annual review, when presented with stories from Level 12, Ginn 720, Jeff will read aloud at 98 ($40 + 58$) wpm with 10 errors or fewer.
2. By the time of the next annual review, when presented with stories from Level 6, Ginn 720, Jennifer will read aloud at 100 wpm with 10 or fewer errors.

UNIT IV

DRAWING THE LRGSECTION 1: Procedures for Drawing the Goal of your Continuous Evaluation System on a Graph

The objective is to instruct the student so that the student's performance reaches a prespecified level, the LRG, by a certain date. This goal is marked with an X on the chart at the intersection representing the desired performance level and the desired date of attainment of the goal. A line of desired progress is then drawn, connecting the point on the chart representing the student's baseline median score and the LRG. Throughout the delivery of instruction, the decision to change the program follows a simple data-based rule. The rule tells you when to change a program that is not producing student growth at or above this line of desired progress.

PROCEDURES FOR DRAWING A GOAL LINE

- (1) Establish a baseline.

A minimum of three measurements is necessary and the data points should all be within approximately 10 points of one another.

- (2) Select the median baseline score.

To determine the median score, order the scores from lowest to highest (e.g., 15, 57, 48) and select the middle one. In this example, 51 is the median (middle score).

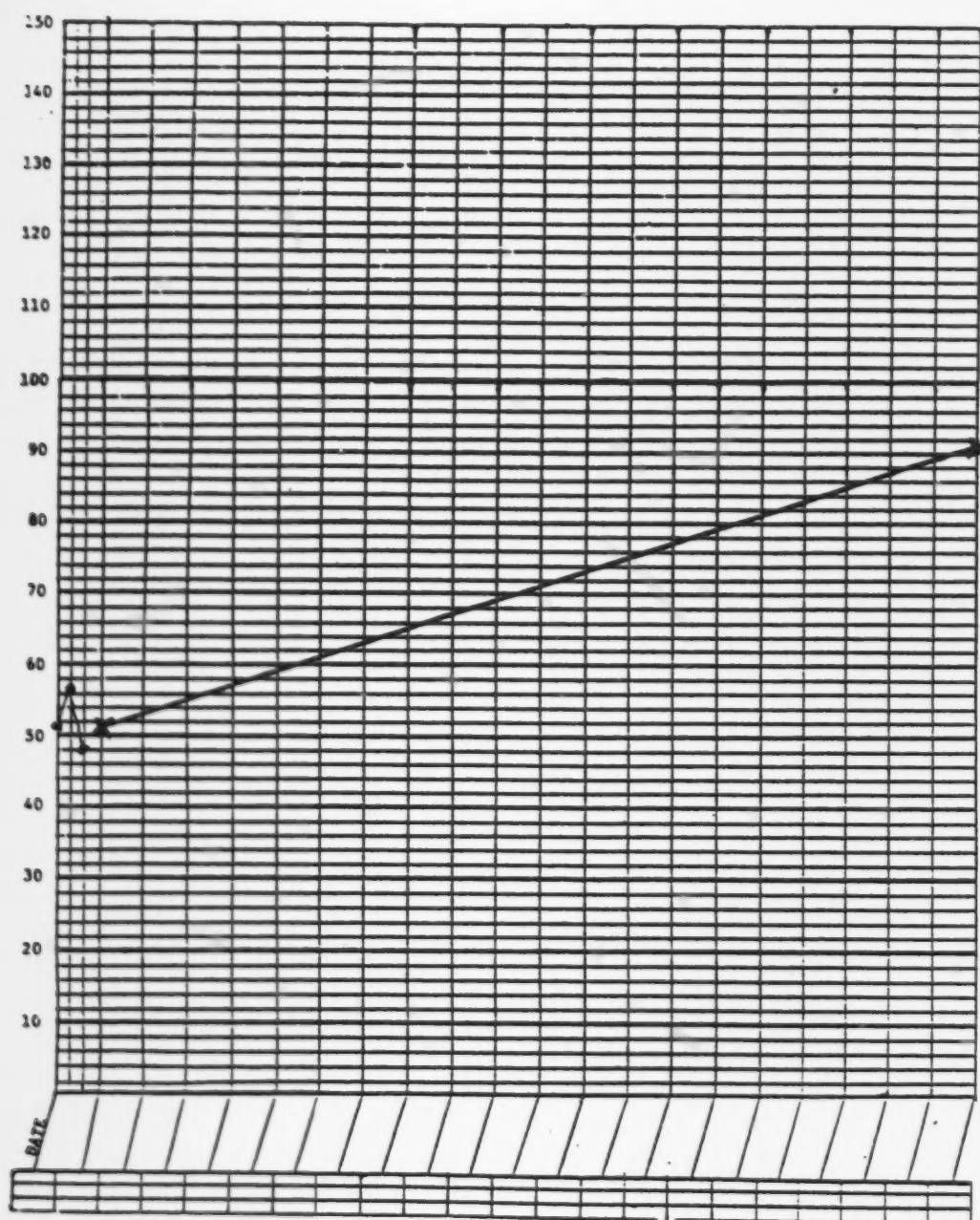
- (3) Place an X at the point representing the median score on the line separating baseline and the first intervention day.

- (4) Place an X at the point representing the long-range goal and the calendar date specified for achievement of the long-range goal.

- (5) Draw the goal line by connecting the two X's.
-

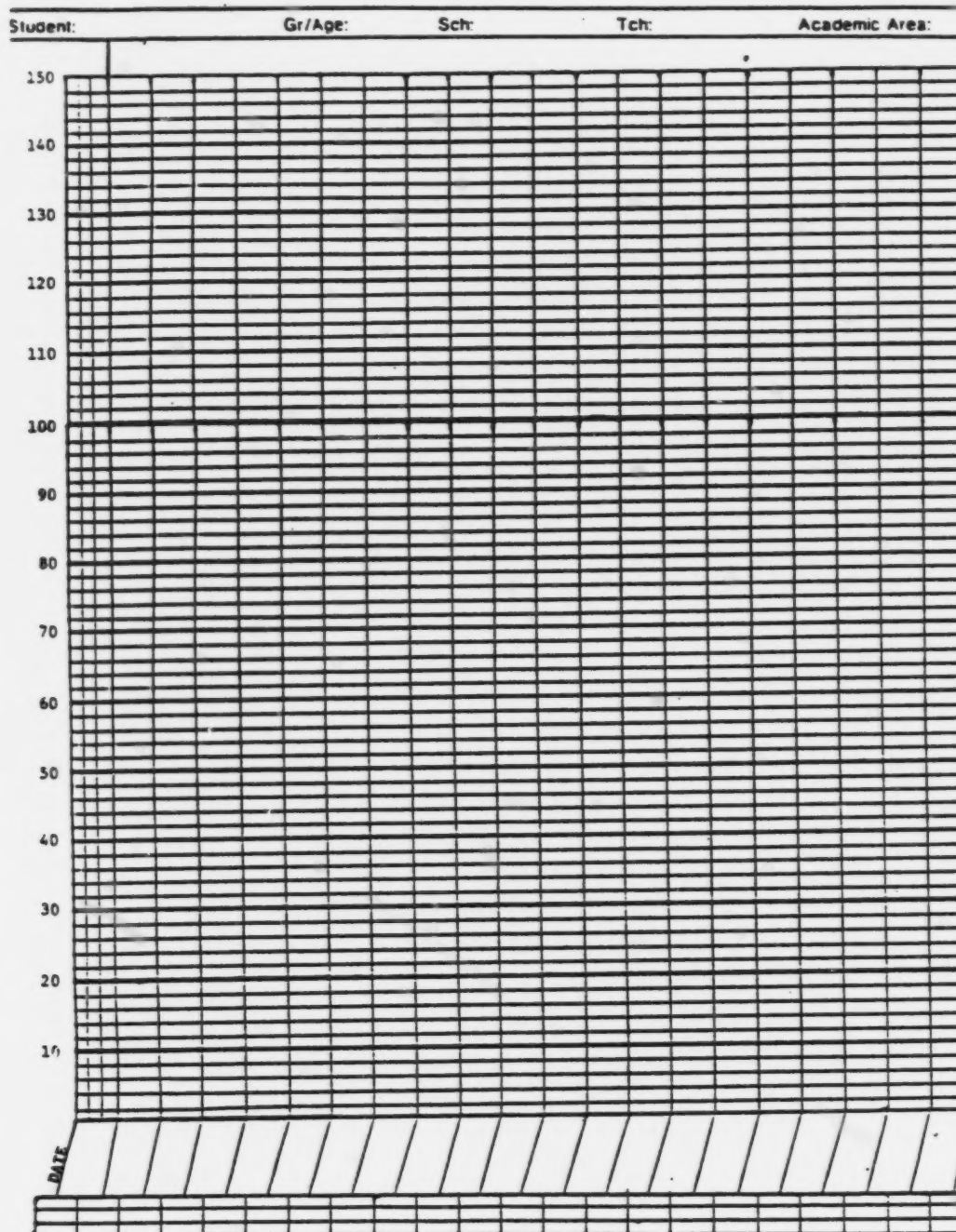
The following is an example of a graph with a goal line. The graph shows three baseline data points.

Example

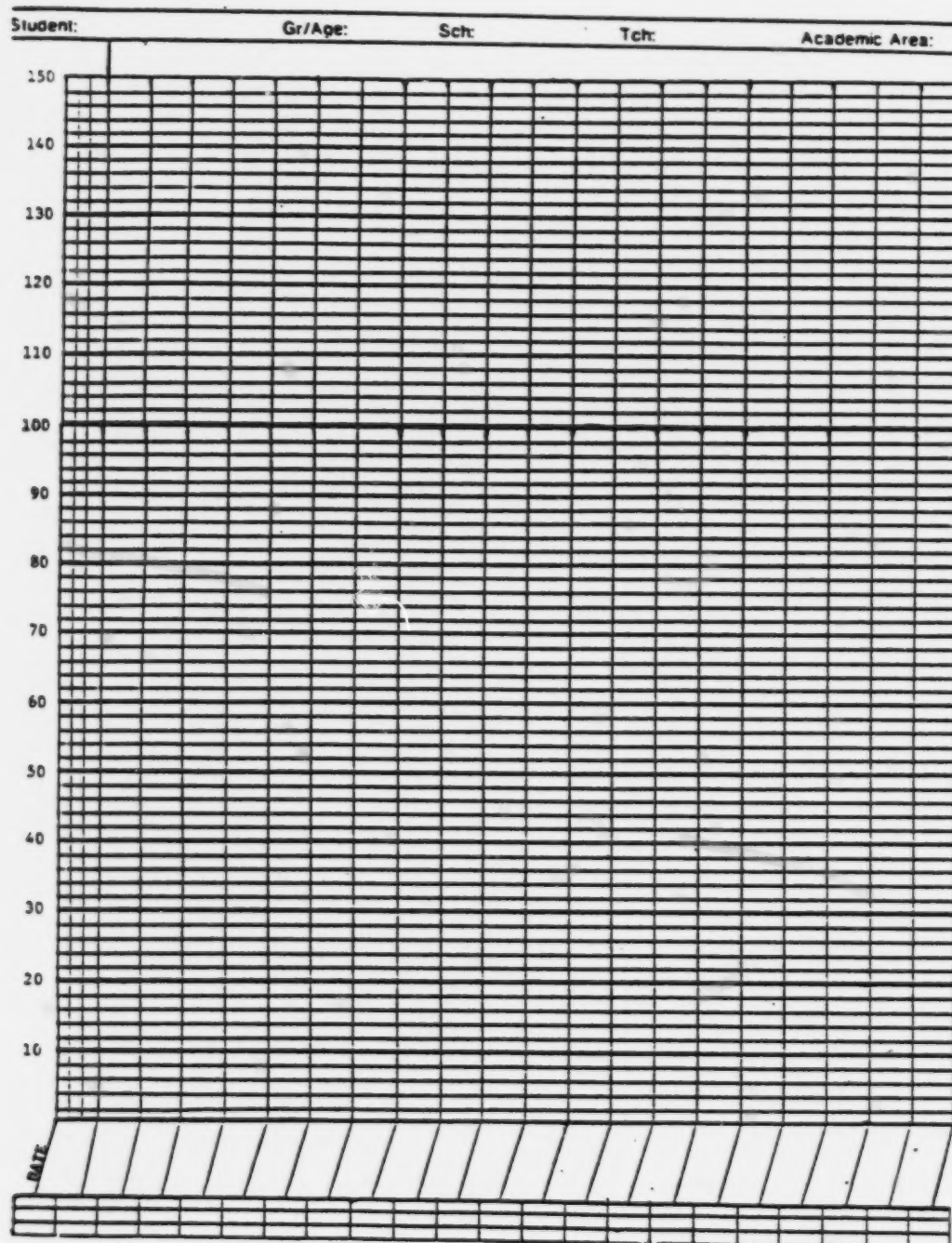


SECTION 2: Practice Drawing the LRG on a Graph

- Q1. Draw a line showing the LRG where the stated long-range goal is: "Given the appropriate stimulus material on the 20th week, the student will read 114 words per minute correct."

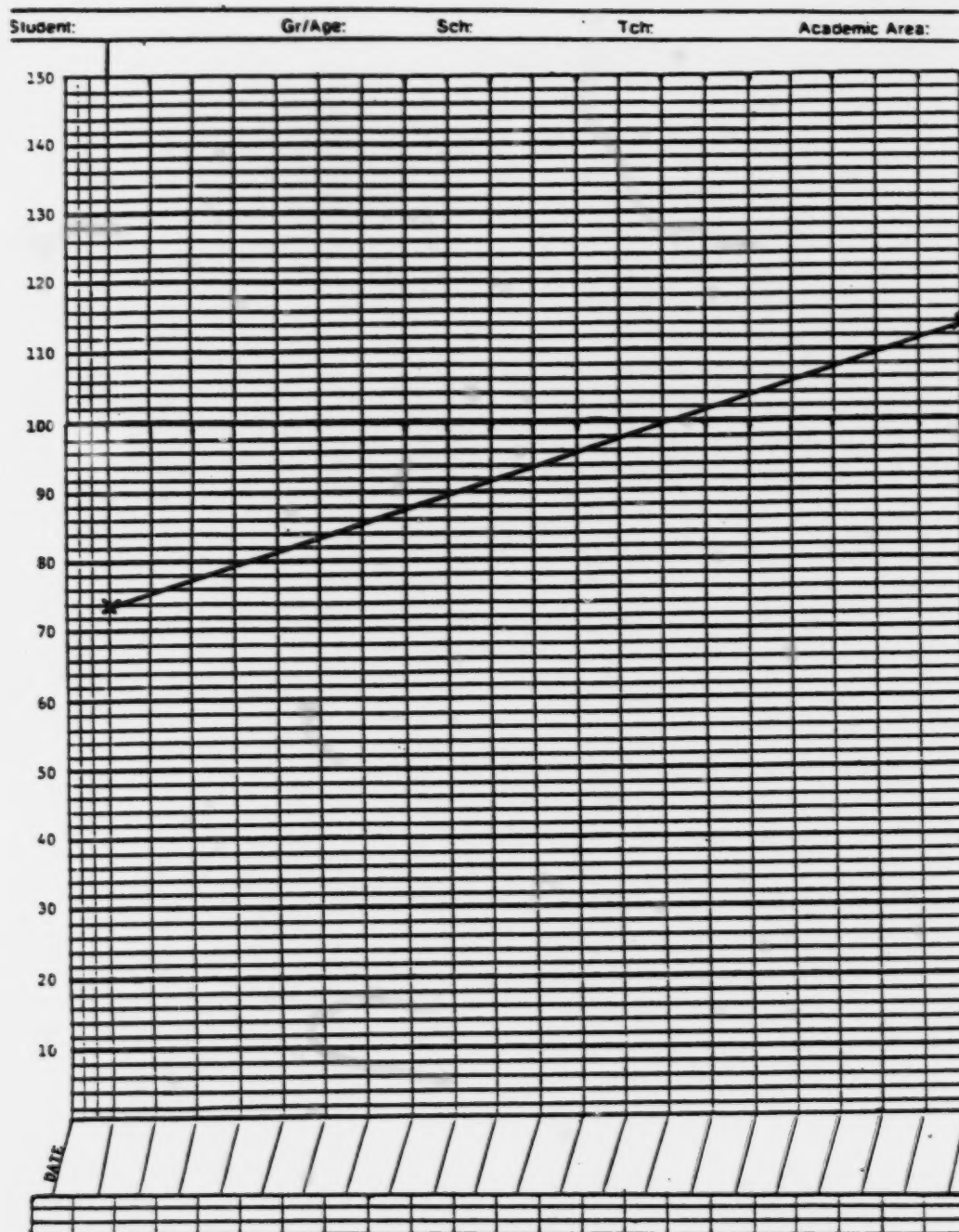


- Q2. Draw a line showing the LRG where the stated long-range goal is: "Given appropriate stimulus material on the 20th week, the student will read 92 correct words per minute."

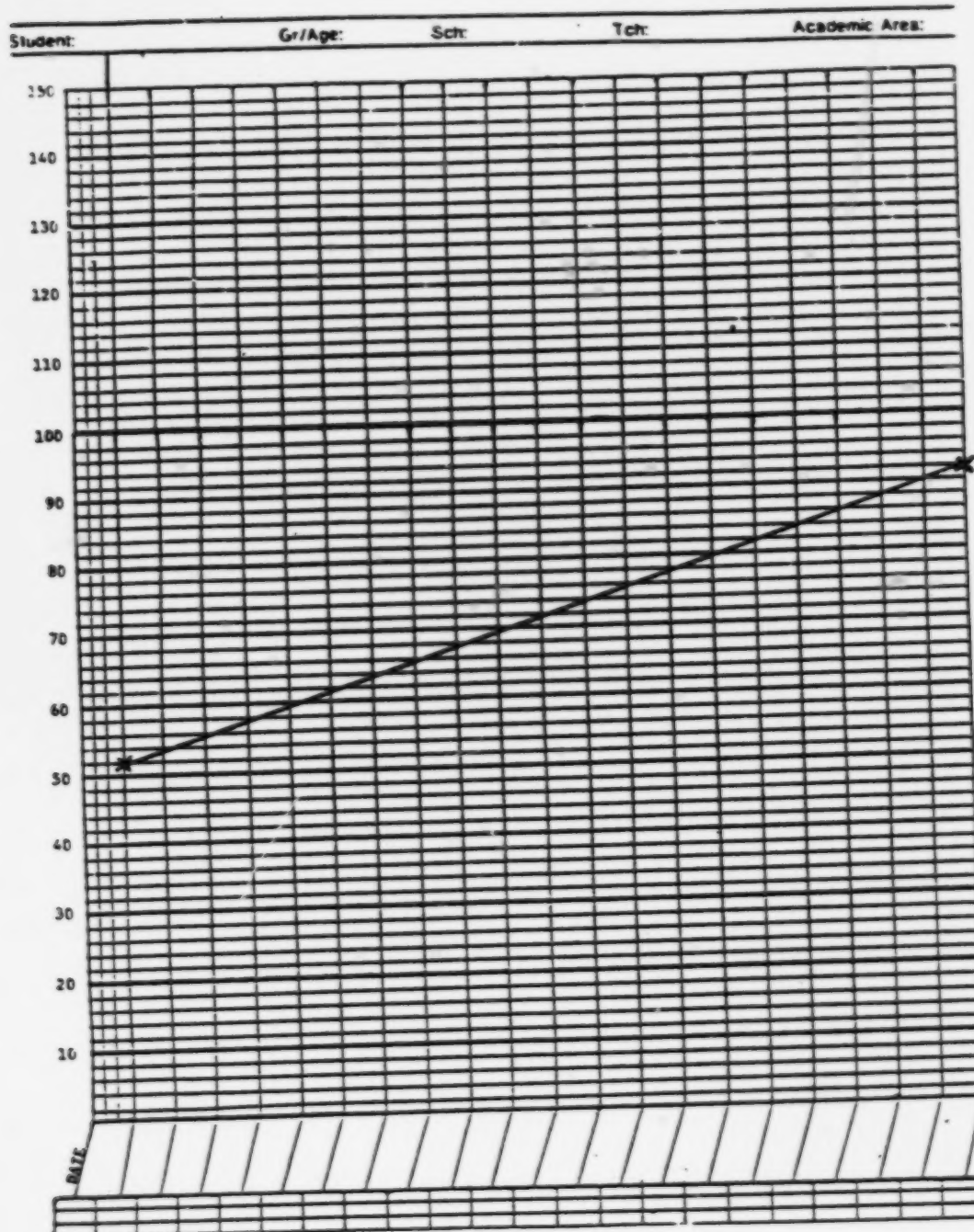


Answers

1.



2.



UNIT V

ON-GOING DATA COLLECTION

After baseline data have been collected the graph is set up, and the goal line is drawn on the graph, instructional programming and on-going data collection can begin. Instructional programming requires that an instructional plan be specified as in the directions in the accompanying manual "Specifying Instructional Plans". The process of on-going data collection will be described below.

Before beginning on-going data collection, what steps should be accomplished?

- (1) Measurement level established (55-75 wcpm).
- (2) Graph set up and completely labeled.
- (3) Baseline data on graph.
- (4) Long range goal set.
- (5) Goal line marked on graph.
- (6) Twenty randomly selected passages in the measurement materials should be identified and the number of words per line counted and listed cumulatively down the right hand column of the teacher's manual. The page numbers should be recorded on notecards and put in an envelope marked Level ____, _____ student's name. (This is not mandatory, but it will make your day to day measurement tasks more efficient.)
- (7) Instructional plan specified.

When these steps are complete, then teaching according to your instructional plan and on-going data collection begins. The teaching is up to you. Some ideas for a variety of purposes are included in the accompanying

manual. Note that the ideas listed in the accompanying manual are not intended to be suggestions of effective practice and are far from exhaustive. Do not stop using a teaching strategy because you do not find it listed in the manual. Add it to the list for your future reference and share it with other teachers.

Steps in On-going Data Collection

- (1) Each week measure the student's performance three times using measurement level material. You will do one passage a day for three days.
 - a. Have the student randomly pick out a page number from the envelope and put a tally mark on the back of the notecard. Each page can be used three times throughout the course of the project. So, after a note card has three tallies on the back, it can be tossed out or saved for future use.
 - b. Open both the student book and teacher's manual to the appropriate page number.
 - c. Tell the student "When I say 'begin,' start reading aloud at the top of this page. Try to read each word. If you wait too long (three seconds) for a word, I'll tell you the word. At the end of one minute, I'll say 'stop'. Do you have any questions?" Note that after the first passage reading for the week, you do not need to repeat this. Be certain that the student knows what to do. Ask them if they know what to do each time.
 - d. Tell the student to 'begin' and follow along as the student reads numbering each omitted and misread word. Watch the time

and at the end of one minute say 'Stop'. You can use an acetate overlay and grease pencil to score or simply tally the errors on the back of the notecard that has the page number on it. See Figure 5-1.

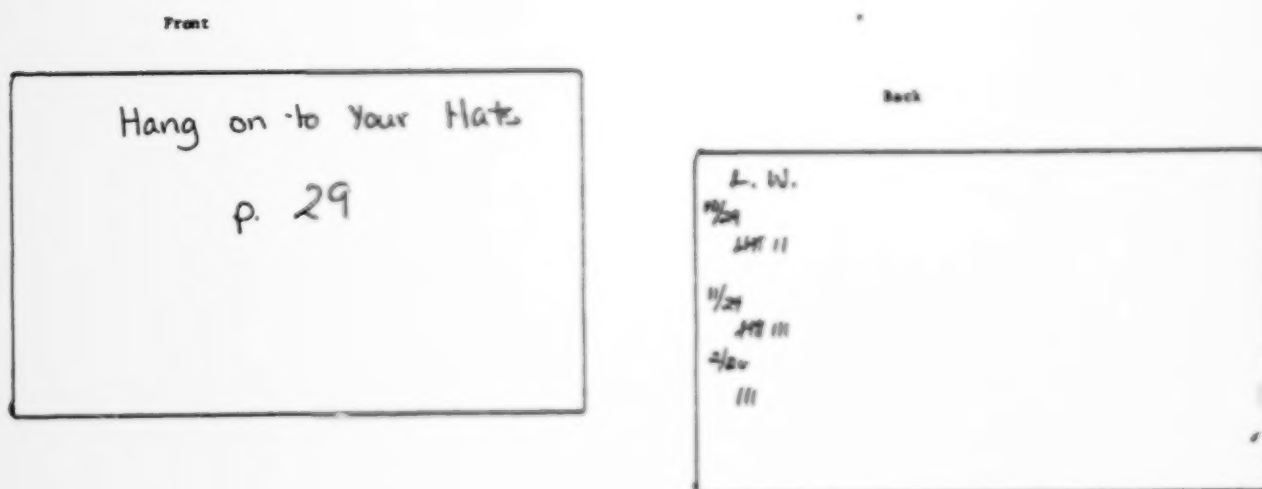


Figure 5-1.

- e. Count the number of words read correctly (total words read minus the error).
- f. Always praise the student for effort (not for their score) and tell them "Today you read _____ words correct".
- g. Write down the score in the appropriate box on the bottom of the graph.
- h. After three readings in a week, determine the median score and plot that data point on the graph. The student may watch you do this. The is your decision. However, be consistent.

Choose to either allow the student to watch each time or never chart the data in view of the student. You must also make a choice about displaying the graph. You can post it on a bulletin board or keep it in a folder. Be consistent.

Those are the steps to follow weekly. Basically, you will listen to the student read three passages for one minute each and graph the median score. The total process should take you no longer ten minutes a week. In these ten minutes, you get a good picture of the student's general reading progress and an idea of how successful your instructional plan is in promoting the progress you hoped for. Directions for deciding whether or not your plan is successful are in are in Unit VI.

Becoming Efficient

If you follow the steps as outlined, the measurement procedures should not take an undue amount of time. You may find that in the beginning, you need up to 20-minutes a week, but with practice you should be able to reduce the time to close to 6-minutes (3-minutes of listening and 3-minutes to prepare, score, and graph).

To help you keep the time down, some efficiency tips are listed below. Some of these have been mentioned before.

Efficiency Tips

- (1) Pick out all 20-pages ahead of time, write down the page numbers on notecards and put the notecards in a clearly marked envelope.
- (2) Have the number of words per line counted cumulatively in your teacher's manual.

- (3) Consider setting up a measurement station in your room where you keep all the materials you need. The materials include the student text, teacher's manual, stop watch, pencil, acetate sheet and grease pencil, and graph. If you do not have the space for a measurement station then use a large envelope for the notecards, tape the graph to the outside of the envelope and also keep the stop watch and pencil in the envelope. When it come to measurement time, all you will need is the envelope and the books.
- (4) Have the student pick the page number and then open up the student text to the right page and if possible, also locate the page in the teacher's text (another student text could be used if the teacher wants to write the number of words per line in a student text).
Train the student to find the page and then put the book face down.
- (5) Have the student put the materials away.
- (6) As the student reads, number the errors instead of slashing them. Then at the end of the minute you do not need to take the time to count the slash marks.

You may have some ideas of your own as to how to be efficient. Share them.

UNIT VI

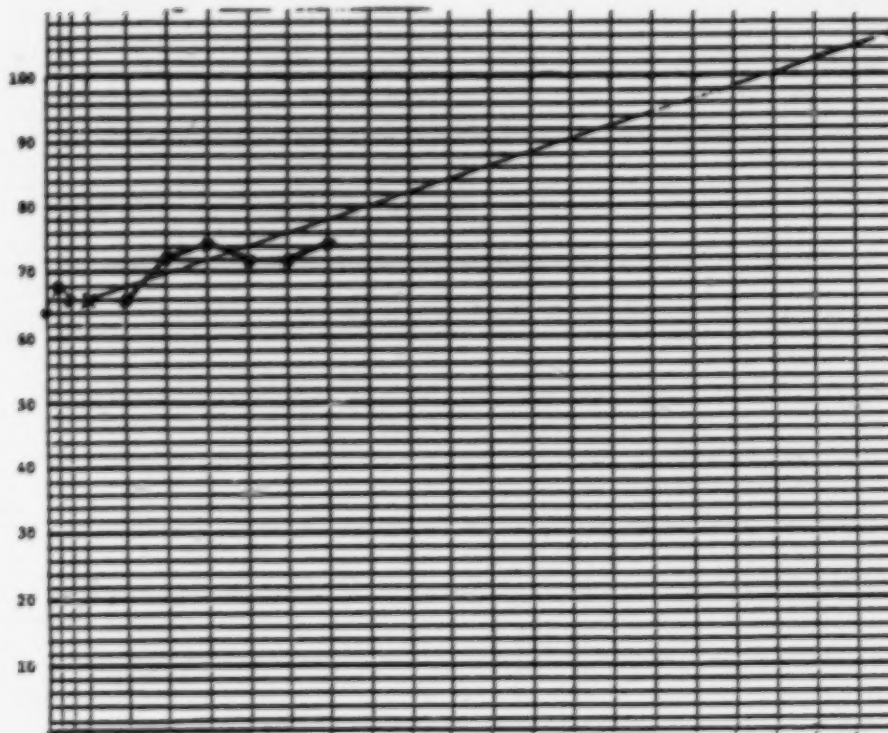
DATA UTILIZATION

SECTION 1: Deciding When to Change the Program

- (1) Each day the student's performance is measured, record the data on the graph. Compare the student's actual performance on the graph to the desired performance represented by the goal line using the criteria in 2.
- (2) If the student's performance data fall below the goal line on three consecutive weeks (3 consecutive data points), change the instructional program.

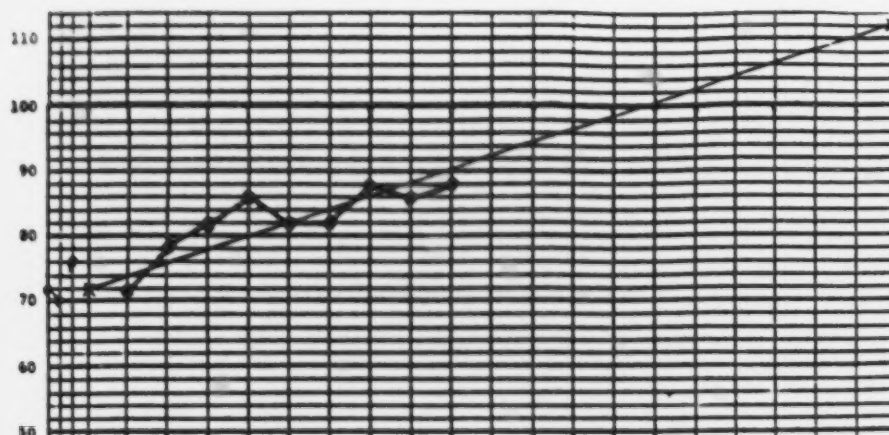
SECTION 2: Practice Judging Graphs

Example 1:

Decision: Change the program.

(Rule: Change the program if three consecutive data points fall below the goal line.)

Example 2:



Decision: Stay with the current Special Education program.

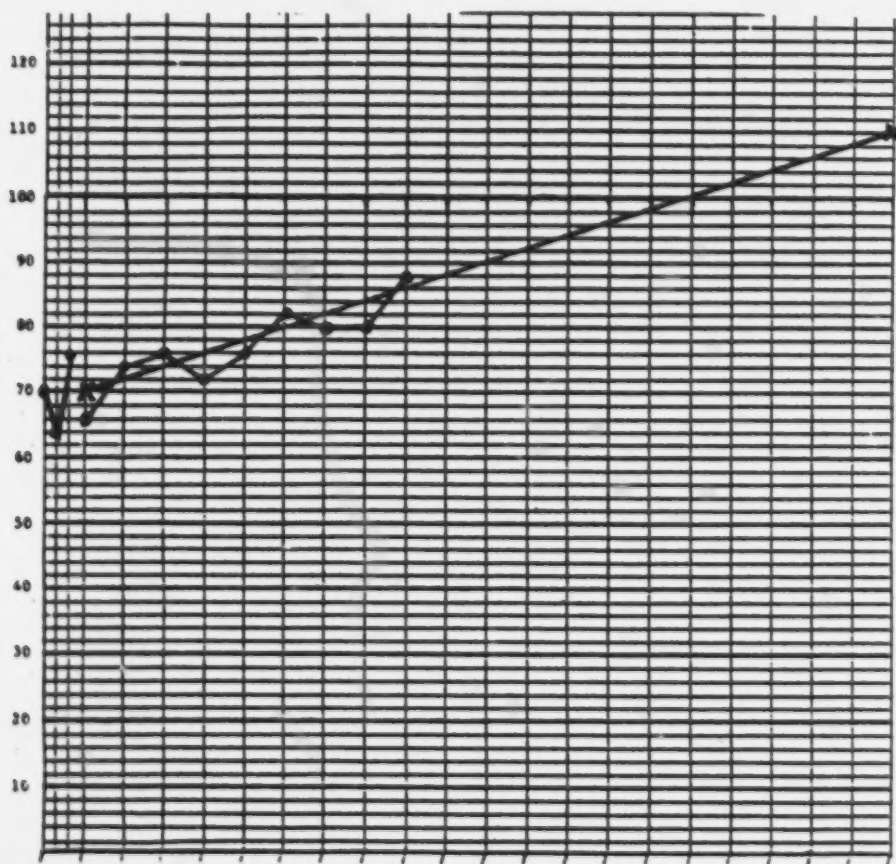
(Rule: Continue a program unless three consecutive data points fall below the goal line.)

Practice

Question 1. Do you change the instructional plan?

Yes

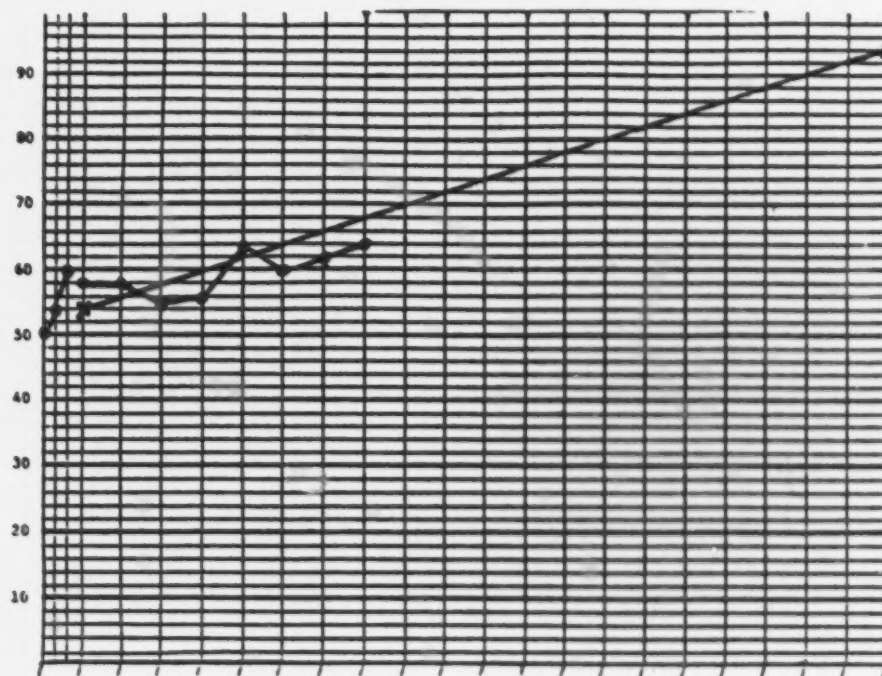
No



Question 2. Do you change the instructional plan?

Yes

No



Answer 1. NO

Answer 2. YES

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